

What is Claimed is:

1. A method of sharing at least one resource amongst a plurality of applications issuing requests in different request classes, comprising the steps of:

i) dynamically assigning a priority to each of a plurality of request queues associated with respective ones of said request classes, in accordance with a moving average resource allocation to each of said respective request classes;

ii) receiving and queuing said requests from said applications in said plurality of queues in accordance with said respective request classes;

iii) allocating said at least one resource to one of said applications whose request has been queued longest in a highest priority one of said queues, and in response to said one of said applications relinquishing said resource; then

iv) repeating steps i) to iii).

2. The method of claim 1, wherein said step of dynamically assigning said priority to each of said plurality of request queues is implemented as follows:

$$p_i = 1.0 \quad \text{if } u_i \leq \min_i$$

$$p_i = 1.0 - (u_i - \min_i) / (\max_i - \min_i) \quad \text{if } \min_i < u_i \leq \max_i$$

$$p_i = 0.0 \quad \text{if } u_i \geq \max_i$$

where p_i is the priority assigned to the i^{th} one of said queues associated with the i^{th} one of said request classes, and u_i is the moving average allocated to said i^{th} one of said request classes.

3. The method of claim 2, further including the step of updating said moving average of each of said request classes immediately upon allocating said resource in the event of multiple resources.

4. The method of claim 1, wherein the priority assigned to each of said plurality of request queues in accordance with said moving average resource allocation conforms to a predetermined shape of priority function.
5. The method of claim 4, wherein said shape of said priority function is linear with respect to said moving average resource allocation.
6. The method of claim 4, wherein said shape of said priority function is exponential with respect to said moving average resource allocation.
7. The method of claim 4, wherein said shape of said priority function is a step function with respect to said moving average resource allocation, with steps of varying size.